

## CLIMATOLOGICAL DATA FOR FEBRUARY, 1911.

## DISTRICT No. 9, COLORADO VALLEY.

FREDERICK H. BRANDENBURG, District Editor.

## GENERAL SUMMARY.

The stormy conditions that set in near the middle of January continued with but little interruption during February. While the average precipitation for the month was not much above the normal, yet, combined with that for January, it may be considered as making up generally for the light precipitation that characterized the fall months and the first half of the winter. The total for the months November, December, January, and February, for the basin of the Green, is 4.68 inches, or 1.31 inches less than for the corresponding months a year ago; for the Grand, the amount, 6.33 inches, is practically the same as that of a year ago; for the San Juan the total is 8.54 inches; Little Colorado, 4.70 inches; and the Gila, 5.45 inches. These values are 0.32, 0.69, and 2.38 inches, respectively, more than for the corresponding months in 1909-10.

In western New Mexico water for irrigation is likely to be adequate, except in the southern part. In Arizona it is plentiful, and the supply will last till summer, the season of frequent rains. The range outlook is very favorable in New Mexico and Arizona.

Temperatures in Arizona and Wyoming averaged lower than the normal, but in the remainder of the district a slight excess was general.

The sunshine was deficient, and the relative humidity was somewhat greater than usual.

## TEMPERATURE.

The mean of the 134 stations reporting was 36.9°, or 0.5° below the normal. By subdivisions the means and departures were: Western Wyoming, 12.8°, -2.5°; western Colorado, 24.2°, +1.4°; eastern Utah, 30.2°, +1.2°; western New Mexico, 38.1°, +1.4°; Arizona, 46.3°, -2.0°; and southeastern Nevada, 39.8°. The highest monthly mean was 57.6°, at Maricopa, Ariz., and the lowest, 5.4°, at Corona, Colo. Except in the extreme southwestern part of Arizona, the first 11 days were warmer than the normal throughout the district, and in the central part high mean temperatures continued nearly a week longer. From the 15th to the 22d, inclusive, there was a marked daily deficiency of temperature in Arizona and southeastern Nevada, and from the 20th almost to the end of the month in the central and northern parts of the district. By subdivisions the extremes were: Western Wyoming, 48° and -30°; western Colorado, 59° and -25°; eastern Utah, 69° and -27°; western New Mexico, 78° and -12°; Arizona, 82° and -20°; and southeastern Nevada, 67° and 10°.

## PRECIPITATION.

The average for the 177 stations reporting was 1.62 inches, or 0.39 inch above the normal. An excess was noted on all drainage areas except the Grand. By watersheds the means and departures were: Green, 1.41, +0.22; Grand, 1.63, -0.08; San Juan, 2.97, +1.91; Little Colorado, 1.73, +0.43; Gila, 1.71, +0.37; Mimbres, 1.69, +0.86; and Colorado, proper, 1.30, +0.12 inch. The greatest monthly amount was 7.02 inches, at Durango, Colo.; this came largely in the form of snow and is the greatest of record at that station for any month. The least monthly amount was 0.05 inch, at Aztec, Ariz. The average number of days with 0.01 inch or more of precipitation was 4 in western Wyoming, 10 in western Colo-

rado, 7 in eastern Utah, 7 in western New Mexico, 5 in Arizona, and 3 in southeastern Nevada. For the district as a whole the average was 7 days. At the close of the month 97 stations in Colorado having an average elevation of 8,585 feet showed a mean depth of 29 inches of snow. This depth is 5.6 inches less than that reported for the corresponding date last year. Heavy rain fell in the central and northern parts of Arizona on the 4th and 5th, causing a moderate freshet in the rivers from the 4th to the 6th.

## MISCELLANEOUS.

The sunshine was from 5 to 11 per cent below the normal. Grand Junction reported 57, Durango 61, Flagstaff 75, Phoenix 69, and Yuma 76 per cent of the possible.

The mean relative humidity was above the normal, the excess being marked in southwestern Colorado and central Arizona. The following values were reported: Grand Junction 65, Durango 75, Flagstaff 78, Phoenix 65, and Yuma 48 per cent.

## EXTRACTS FROM SECTION SNOWFALL BULLETINS.

*Western Wyoming.*—The prospect for water over the upper part of the Green River Valley was improved during the month, and a shortage in that section is not expected.

*Western Colorado.*—West of the Continental Divide, over the upper drainage basin of the Yampa, the Grand, and the Gunnison, less than the usual amount of snow fell, while at lower levels an excess was general. In the upper reaches of the San Juan the snowfall was remarkably heavy. In general the snow is solidly packed.

*Eastern Utah.*—At the close of February the amount of snow in the mountains and hills of the Green River and the Colorado River watersheds was about the same as at the corresponding time last year. Compared with the average, the prospective water supply is somewhat deficient.

*Western New Mexico.*—Very heavy precipitation occurred over the upper drainage area of the San Juan, following heavy precipitation in January. A large amount of packed snow is reported in the higher mountains, and the soil of the valleys is filled with moisture. The outlook for water is greatly improved, especially for the early part of the season. There was also an excess of precipitation, mostly rain, over the headwaters of the San Francisco, Gila, and Mimbres Rivers. On the higher ranges considerable snow fell. Seasonal rains, however, will be needed, owing to the lateness of the snow.

*Arizona.*—The snowfall for February was one and one-half times greater than the total for the preceding two months. The average depth at 8,000 feet elevation is about 14 inches. Over the upper watershed of the Gila the depth averaged 27 inches, and for that of the Little Colorado the average was 49 inches.

## BREAK IN THE LOWER COLORADO.

By L. N. JESUNOFFSKY, Section Director.

Another serious break in the partly constructed dam across the channel of the Colorado River has occurred. The Government officials report that about 175 feet of the trestle and rock dumped on each side of the levees have been carried away. While they express confidence in being able to repair the break, it is recognized that the season of high water is approaching, with the probability of a much greater increase in volume of water over last year, and that the water may break into the Salton Basin as it did five years ago, threatening the Imperial and Coachella Valleys. The work of repairing the damage has been started, in the hope of closing the break before the river rises. The dam is located in Lower California, 20 miles below the boundary, and is built by the United States Government with the approval of the Mexican authorities. The purpose is to force the river back into its channel.